CLAIM AMENDMENTS

1. (currently amended) A method for measuring the polarization mode dispersion of an optical fiber, the method comprising the steps of:

applying an optical signal to a first end of the fiber, [[and]]

coupling a second end of the fiber to an interferometer ~~, said method comprising the step of:~~;

generating by means of said interferometer at least one interferogram comprising at least a central peak and two side lobes having a determined information content; ~~and being characterized by the steps of~~

processing said interferogram in such a way as to measure the information content of at least one of said two side lobes; [[and]]

determining the polarization mode dispersion of the fiber and associating ~~to said~~ with the measurement of said information content a probability density function representative of the polarization mode dispersion of the fiber in the form of differential group delay by computing the deconvolution of the one side lobe with the central peak so that the deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber; and

outputting the determined polarization mode dispersion.

2. (canceled)

3. (currently amended) The method as claimed in claim 1, further comprising the ~~characterized by the additional~~ step of determining an average of measurements of said information content ~~whereto~~ to which said probability density is to be associated.

4. (currently amended) The method as claimed claim 1, ~~characterized in that~~ wherein said information content comprises a single numeric value determined by the position of said at least one side lobe in the interferogram.

5. (currently amended) The method as claimed in claim 1 ~~characterized in that~~ wherein said information content comprises a plurality of values determined by the position of said at least one side lobe in the interferogram.

6. (currently amended) A computer program product able to be directly loaded in the internal memory of an electronic measuring device and comprising portions of software code to implement the method as claimed in claim 1 when the product is run on said electronic device.

7. (currently amended) A system for measuring the polarization mode dispersion of an optical fiber, the system comprising:

an optical source able to generate an optical signal to be injected into the fiber;

an interferometer associated [[to]] with the fiber and able to generate an interferogram comprising at least a central peak and two side lobes having a determined information content;

~~characterized by~~

~~a device~~ control means connected to said interferometer ~~and able to~~ for

processing said interferogram in such a way as to measure the information content of at least one of said side lobes; [[and]]

determining ~~determine~~ the polarization mode dispersion of the fiber and associating ~~to said~~ with the measurement of said information content a probability density function representative of the polarization mode dispersion of the fiber in the form of differential group delay; and

computing the deconvolution of the one side lobe with the central peak so that the deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber.

8. (canceled)

9. (currently amended) The system as claimed in claim 7, ~~characterized in that said device comprises a second module able to determine~~ wherein the control means further serves for determining an average of measurements of said information content ~~whereto~~ to which said probability density is to be associated.

10. [[The]] A device for measuring the polarization mode dispersion of an optical fiber into which optical signals have been injected, the device comprising

an optoelectronic module able to convert the optical signals into electrical signals;

~~a display device able to generate~~ means for generating an interferogram comprising at least a central peak and two side lobes having a determined information content; ~~characterized by~~

[[a]] control ~~unit able to~~ means for

measuring ~~measure~~ the information content of at least one of said two side lobes; [[and]]

determining ~~determine~~ the polarization mode dispersion of the fiber and associating with the ~~to said~~ measurement of said information content a probability density function representative of the polarization mode

dispersion of the fiber in the form of differential group delay; and

computing the deconvolution of the one side lobe with the central peak so that the deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber.

11. (canceled)

12. (currently amended) The device as claimed in claim 10, ~~characterized in that it comprises a second program module able to determine~~ wherein the control means further serves for determining an average of measurements of said information content ~~whereto~~ to which said probability density is to be associated.

13. (new) The method as claimed in claim 1 wherein the determined polarization mode is outputted by displaying it.